IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Guenter Weinberger *et al.*	Confirmation No. 2140	
Serial No.:	10/699,022	Art Unit:	2115
Filed:	October 31, 2003	Examiner:	Wang, Albert C.
For:	CONVERGENCE DEVICE WITH DYNAMIC PROGRAM THROTTLING BASED ON POWER INDICATOR		

AMENDMENT

Mail Stop Patent Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

In response to the official Patent Office action dated December 11, 2006, wherein Claims 1-20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Naito *et al.*, U.S. Patent 6,735,455, in view of Gschwind, *et al.*, U.S. Patent 6,948,082 and Browning *et al.*, U.S. Patent 6,415388, reconsideration of the rejection is hereby requested based on the following arguments. A Summary of the amended claims is enclosed. Claims 1 and 13 have been cancelled and all the method claims are now dependent from Claim 21.

Independent method Claim 21, device Claim 19 and article of manufacture Claim 20, each include the following limitations: (a) storing, for at least a given one of a plurality of noncritical programs associated with the data communication functions, an identifier of at least one alternate capacity program performing substantially the same function as the given program but having a different power source capacity associated therewith; and (b) based at least in part on a power indicator representative of a characteristic of the power source, setting at least a subset of the plurality of noncritical programs in one of an executing state, a pending state and a sleeping state and replacing execution of the given program which is in the executing state with execution of the alternate capacity program which is in the pending state, such than an amount of power source capacity utilizable for the voice call communication functions is increased.

Assuming for argument sake that it would be obvious to combine Naito *et al.*, Gschwind, *et al.*, and Browning *et al.*, they would not teach the limitations of independent Claims 19-21. As noted above, they each include the limitation:

> based at least in part on a power indicator representative of a characteristic of the power source, <u>setting at least a subset of the plurality of noncritical programs in one of an executing state, a pending state and a sleeping state</u> and replacing execution of the given program which is in the executing state <u>with execution of the alternate capacity program which is in the pending state.</u>

This is the limitation similar to those of Claims 13-15, which was rejected in view of Gschwind *et al.* col. 5, lines 33-66 and Naito *et al.* col. 7, lines 45-63.
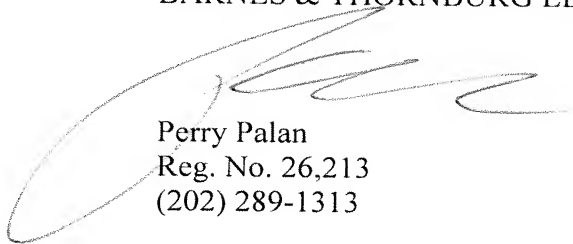
The area noted in Gschwind *et al.* specifically describes all the permutations and combinations of "disabling, execution or reducing the execution frequency of an algorithm, substituting one power-saving algorithm for another, changing a parameter, etc." While disabling the execution of a program may be considered a sleeping state, this is disabling an executed program. It is not disabling or setting to sleep an alternative capacity program which corresponds to the executed program. This is the relationship required by of the limitation of the claims. It specifically requires that the noncritical program that is in the execution state is replaced with the execution of the alternative capacity noncritical program which is a pending state. The alternative noncritical program may be in a sleeping state and thus the substitution would not take place. Although Gschwind *et al.* does set programs to the sleeping state, it does swap programs of different capacities, and does not relate these three states of executing, pending and sleeping.

Naito *et al.* describes limiting all functions when the battery capacity gets too low to allow emergency use of the device. As with Gschwind *et al.*, this does not describe the relationship or the three states for noncritical programs. Thus the limitations of Claims 19, 20 and 21 are allowable over the art.

Thus Claims 19, 20 and 21 and their dependent claims are considered allowable over the art of record and thus the passage of this case to issue is respectfully solicited.

Respectfully submitted,

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CLAIMS SUMMARY

1.   (Cancelled)

2.   (Currently Amended) The method of Claim 21 wherein the power source comprises a battery.

3.   (Original)   The method of claim 2 wherein the power indicator is representative of a remaining capacity of the battery.

4.   (Currently Amended) The method of claim 21 wherein if the power indicator is below a first threshold, execution of the given noncritical program is replaced with execution of an alternate capacity noncritical program having associated therewith a lower power source capacity than the given program.

5.   (Currently Amended) The method of claim 21 wherein if the power indicator is not below a first threshold, execution of the given noncritical program is replaced with execution of an alternate capacity program having associated therewith a higher power source capacity than the given program.

6.   (Currently Amended) The method of claim 21 wherein the voice call communication functions comprise one or more functions associated with cellular voice call communications.

7.   (Currently Amended) The method of claim 21 wherein the data communication functions comprise one or more functions associated with multimedia processing at one or more of a specified data rate, a specified refresh rate and a specified display resolution.

8.   (Original)   The method of claim 7 wherein the given program performs multimedia processing at a specified data rate and the alternate capacity program performing substantially the same function as the given program performs multimedia processing at a different data rate than the given program.

9.   (Original)   The method of claim 7 wherein the given program performs multimedia processing at a specified refresh rate and the alternate capacity program performing substantially the same function as the given program performs multimedia processing at a different refresh rate than the given program.

10. (Original) The method of claim 7 wherein the given program performs multimedia processing at a specified display resolution and the alternate capacity program performing substantially the same function as the given program performs multimedia processing at a different display resolution than the given program.

11. (Currently Amended) The method of claim 21 wherein the critical programs comprise programs utilized to implement at least one of an operating system running on the processor, a graphical user interface of the convergence device, and one or more of the voice call communication functions.

12. (Currently Amended) The method of claim 21 wherein the plurality of noncritical programs are categorized based on power source capacity into at least two categories including a category at a first capacity and a category at a second capacity, the first capacity being a lower capacity than the second capacity.

13. (Cancelled)

14. (Currently Amended) The method of claim 4 wherein if the power indicator is below a second threshold that is lower than the first threshold, the given noncritical program and the alternate noncritical program are set to a the sleeping status.

15. (Currently Amended) The method of claim 14 wherein if the power indicator is not below the second threshold, any noncritical program having a the sleeping status is set to a the pending status.

16. (Original) The method of claim 14 wherein the second threshold is representative of a minimum acceptable capacity for continuation of one or more of the voice call communication functions.

17. (Currently Amended) The method of claim 21 wherein the processor is operative to store a list of the noncritical programs with associated capacities for one or more of the noncritical programs.

18. (Currently Amended) The method of claim 21 wherein the processor comprises a multithreaded processor.

19.   (Currently Amended) A convergence device comprising:

a power source; and

at least one processor configured to perform processing operations associated with voice call communication functions and to perform processing operations associated with data communication functions, the processor being operative to execute critical programs and noncritical programs;

the convergence device storing for at least a given one of a plurality of noncritical programs associated with the data communication functions an identifier of at least one alternate capacity program performing substantially the same function as the given program but having a different power source capacity associated therewith;

wherein based at least in part on a power indicator representative of a characteristic of the power source, set at least a subset of the plurality of noncritical programs in one of an executing state, a pending state and a sleeping state and execution of the given program which is in the executing state is replaced with execution of the alternate capacity program which is in the pending state, such that an amount of power source capacity utilizable for the voice call communication functions is increased.

20.   (Currently Amended) An article of manufacture comprising a machine-readable storage medium having embodied thereon program code for use in conserving power by controlling program execution in a convergence device comprising a power source and at least one processor configured to perform processing operations associated with voice call communication functions and to perform processing operations associated with data communication functions, the processor being operative to execute critical programs and noncritical programs, wherein the program code when executed by the processor implements the steps of:

storing for at least a given one of a plurality of noncritical programs associated with the data communication functions an identifier of at least one alternate capacity program performing substantially the same function as the given program but having a different power source capacity associated therewith; and

based at least in part on a power indicator representative of a characteristic of the power source, setting at least a subset of the plurality of noncritical programs in one of an executing state, a pending state and a sleeping state and replacing execution of the given program which is in the executing state with execution of the alternate capacity program

which is in the pending state, such that an amount of power source capacity utilizable for the voice call communication functions is increased.

21.   (Currently Amended) A method for conserving power by controlling program execution in a convergence device comprising a power source and at least one processor configured to perform processing operations associated with voice call communication functions and to perform processing operations associated with data communication functions, the processor being operative to execute critical programs and noncritical programs, the method comprising the steps of:

storing for at least a given one of a plurality of noncritical programs associated with the data communication functions an identifier of at least one alternate capacity program performing substantially the same function as the given program but having a different power source capacity associated therewith; and

based at least in part on a power indicator representative of a characteristic of the power source, setting at least a subset of the plurality of noncritical programs in one of an executing state, a pending state and a sleeping state and replacing execution of the given program which is in the executing state with execution of the alternate capacity program which is in an executing a pending state, such that an amount of power source capacity utilizable for the voice call communication functions is increased.